Operating Instructions

SolConeX

Wall-Mounted Socket, Plug

> 8570/11, 8570/12

STAHL

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2 General Information

2.1 Manufacturer

R. STAHL Schaltgeräte GmbH
Am Bahnhof 30
74638 Waldenburg, Germany

Phone: +49 7942 943-0
Fax: +49 7942 943-4333
Internet: www.stahl.de

2.2 Information Regarding these Operating Instructions

ID NO.: 150646 / 8570601300
Publication Code: S-BA-8570/11/12-04-en-17/06/2009

We reserve the right to make technical changes without notice.

2.3 Symbols Used

▶	Action request: Describes actions to be carried out by the user.
▷	Reaction sign: Describes the results or the reactions to the actions taken.
✗	Bullet
☞	Information sign: Describes the notes and recommendations.
	Warning sign: Danger from energised parts!
	Warning sign: Danger due to an explosive atmosphere!

3 General Notes Regarding Safety

3.1 Safety instructions for installation and operating personnel

The operating instructions contain basic safety instructions which are to be observed during installation, operation and maintenance. Non-observance can lead to endangerment of persons, plant and the environment.

⚠ WARNING
Risk due to unauthorised work being performed on the device! ▷ There is a risk of injury to persons and damage to equipment. ▶ Assembly, installation, commissioning, operation and maintenance must only be performed by personnel who are both authorised and suitably trained for this purpose.

Before assembly/commissioning:

- ▶ Read through the operating instructions.
- ▶ Give adequate training to the assembly and operating personnel.
- ▶ Ensure that the contents of the operating instructions are fully understood by the personnel in charge.
- ▶ The national installation and assembly regulations (e.g. IEC/EN 60079-14) apply.

When operating the device:

- ▶ Ensure the operating instructions are made available on location at all times.
- ▶ Observe safety instructions.
- ▶ Observe national safety and accident prevention regulations.
- ▶ Only run the device according to its performance data.
- ▶ Servicing/maintenance or repair work which are not described in the operating instructions must not be performed without prior agreement with the manufacturer.
- ▶ Any damage may render explosion protection null and void.
- ▶ No changes to the devices or components impairing their explosion protection are permitted.
- ▶ Install and use the device only if it is undamaged, dry and clean.

If you have questions:

- ▶ Contact the manufacturer.

3.2 Warning notes

Warnings are sub-divided in these operating instructions according to the following scheme:

⚠ WARNING
Type and source of the danger! ▷ Possible consequences. ▶ Measures to avoid danger.

They are always identified by the signalling word “WARNING“ and sometimes also have a symbol which is specific to the danger involved.

3.3 Conformity to Standards

The wall-mounted socket 8570/11 and plug 8570/12 comply with the following directives and standards:

- ✗ Directive 94/9/EC
- ✗ IEC/EN 60079-0, IEC 60079-1, IEC/EN 60079-7, IEC/EN 60079-11
- ✗ IEC/EN 61241-1
- ✗ IEC/EN 60947-3, IEC/EN 60947-4-1, IEC/EN 60309, IEC/EN 60529

4 Intended Area of Application

The wall-mounted socket 8570/11 and plug 8570/12 are explosion protected electrical devices.

They serve the connection of portable and fixed electrical devices and the connection of cable or circuits respectively, in areas where an explosion hazard exists.

They have an area classification for use in Zones 1, 2, 21 and 22.

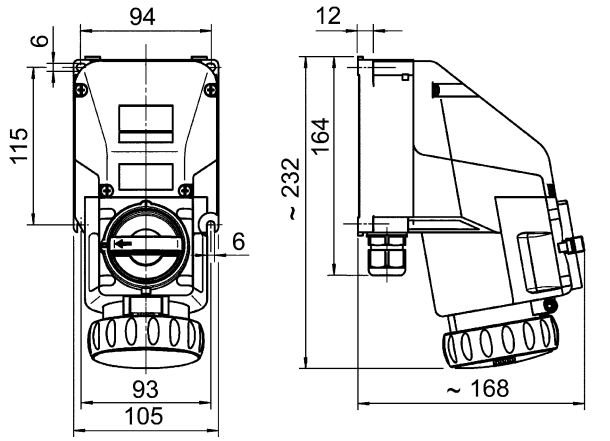
⚠ WARNING
Only use the device for its intended purpose! ▷ Otherwise, the manufacturer's liability and warranty expire. ▶ The device may only be used under the operating conditions described in these operating instructions. ▶ The device may only be used in hazardous areas according to these operating instructions.

5 Technical Data

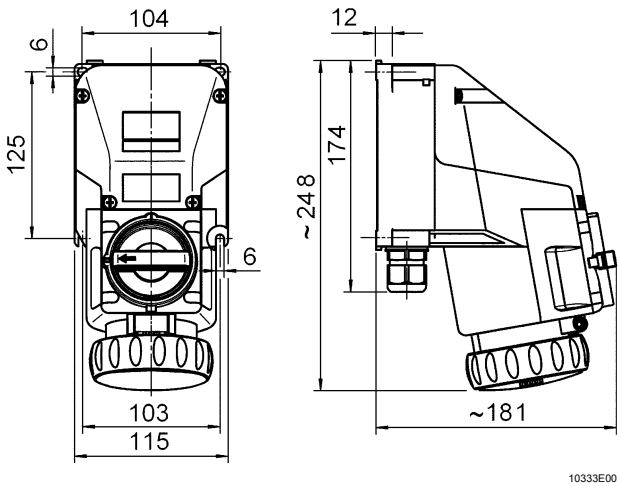
Socket	**8570/11 (16 A)**
Explosion protection	
Gas explosion protection	
ATEX	Ⓔx II 2 G Ex de IIC T6 Special version with intrinsically safe auxiliary contacts Ⓔx II 2 G Ex de [ia] IIC T6
IECEx	Ex de IIC T6 Ex de [ia] IIC T6
Dust explosion protection	
ATEX	Ⓔx II 2 D Ex tD A21 IP66 T80 °C
IECEx	Ex tD A21 IP66 T80 °C
Ambient temperature	- 30 °C ... + 55 °C - 50 °C on request (internal lubrication with silicone grease)
Certificates	
Gas explosion protection	
ATEX	PTB 03 ATEX 1227
IECEx	IECEx PTB 05.0023
Dust explosion protection	
ATEX	PTB 03 ATEX 1227
IECEx	IECEx PTB 05.0023
Marine certification	GL 26 296 - 05 HH (Germanischer Lloyd)
Number of pins	2 P + ⏚, 3 P + ⏚, 3 P + N + ⏚
Auxiliary contacts	optionally (2 pieces), ON - delayed, OFF- advanced
Rated operational voltage	
Main contacts	max. 690 V AC max. 110 V DC
Auxiliary contacts	max. 500 V AC / 110 V DC
Frequency	0 Hz ... 60 Hz
Voltage tolerance	- 10% ... + 6%
Rated operational current	
Main contacts	16 A
Auxiliary contacts	max. 6 A
Rated operational power	Main contacts: AC 3 690 V 16 A 4 kW 220 V / 230 V / 240 V 7.5 kW 380 V / 400 V / 415 V / 500 V 11 kW 600 V / 690 V DC1 110 V 16 A Auxiliary contacts: AC 15 500 V max. 1250 VA AC 15 230 V max. 1380 VA AC 12 500 V max. 3000 VA DC 13 110 V 110 W
Back-up fuse	
without thermal protection	16 A gL
with thermal protection	35 A gL
Operating handle	Actuator is lockable in 0 and I position

Material		
Enclosure	Polyamide, glass fibre reinforced	
Degree of protection	IP66	
Type of connection	Screw terminals	
Connection cross-section		
Main contacts	12 x 1.5 mm^2 ... 6 mm^2 solid 2 x 1.5 mm^2 ... 4 mm^2 finely-stranded	
Auxiliary contacts	2 x 0.5 mm^2 ... 2.5 mm^2 solid, finely-stranded	
Cable entries		
Stopping plug	1 x M 25 x 1.5	
Cable gland	1 x M 25 x 1.5	
Cable dia. range	7 mm ... 17 mm	
Special version	Cable entries on top and rear side. 1 x M25 metal cable gland (see R. STAHL Catalogue, Chapter 12).	
Weight	8570/11-3	1.12 kg
	8570/11-4	1.35 kg
	8570/11-5	1.45 kg
	8570/12-3	0.31 kg
	8570/12-4	0.38 kg
	8570/12-5	0.43 kg
Service life	5000 switching cycles (electrical and mechanical)	
Tightening torque		
Terminals	max. 1.2 Nm	
Connection chamber cover	max. 1.8 Nm	
Plug	**8570/12**	
Further technical data	see sockets 8570/11	
Cable connection		
Cable dia. range	8 mm ... 20 mm	
Tightening torque		
Plug enclosure	max. 1.0 Nm	

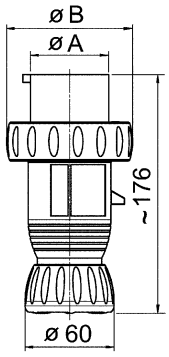
Dimension drawings (all dimensions in mm) - subject to alterations



8570/11-3..



8570/11-4.. and 8570/11-5..

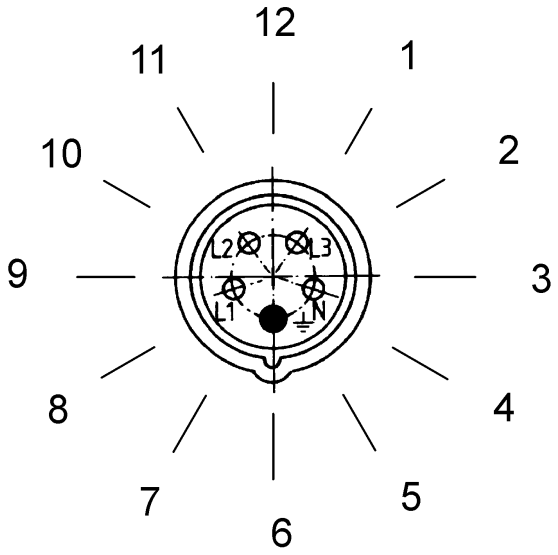


8570/12-..

Type	A	B
8570/12-3.. 16 A, 2 P + ø	43.5	76
8570/12-4.. 16 A, 3 P + ø	49	89
8570/12-5.. 16 A, 3 P + N + ø	56.5	92

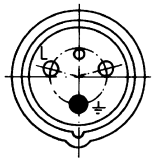
Position of the protective earth (PE) contact

Position: clock-hour position; View: front face of the socket



02395E00

Example: clock-hour position

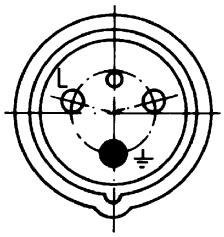


06190E00

250 V = 6 o'clock

Contact layout and terminal markings

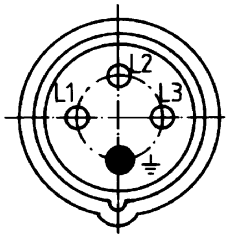
2 P + ⏚



06190E00

8570/11-3..

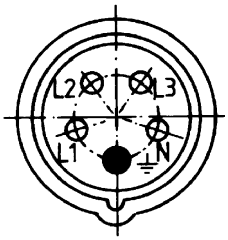
3 P + ⏚



06556E00

8570/11-4..

3 P + N + ⏚



06555E00

8570/11-5..

Contact layout and terminal markings in the 6 o'clock position (view from the front face of shrouded socket onto the contacts).

Contact layout and identification colour and terminal markings

Number of poles	Frequency [Hz]	Voltage [V]	Identification colour	Position of the PE contact
8570/..-3.. 2P + ⏚	50 - 60	110 - 130	yellow	4 o'clock
	50 - 60	200 - 250	blue	6 o'clock
	60	277 [1)]	light grey	5 o'clock
	50 - 60	480 - 500	black	7 o'clock
	> 300 - 500 [2)]	> 50	green	2 o'clock
	DC	> 50 - 110	light grey	3 o'clock
8570/..-4.. 3 P + ⏚	50 - 60	200 - 250	blue	9 o'clock
	50 - 60	380 - 415	red	6 o'clock
	60	440 - 460 [1)]	red	11 o'clock
	50 - 60	480 - 500	black	7 o'clock
	50 - 60	600 - 690	black	5 o'clock
	100 - 300 [2)]	> 50	green	10 o'clock
8570/..-5.. 3 P + N + ⏚	50 - 60	120/208 - 144/250	blue	9 o'clock
	50 - 60	200/346 - 240/415	red	6 o'clock
	50 - 60	277/480 - 288/500	black	7 o'clock
	50 - 60	347/600 - 400/690	black	5 o'clock
	60	250/440 - 265/460 [1)]	red	11 o'clock

Identification colour and layout in relation to the keyway for the various voltages and frequencies, in accordance with IEC/EN 60309-2

1) Primarily for installation on board ships

2) Frequencies ≥ 100 Hz lead to increased heating behaviour. This must be compensated for by a max. ambient temperature of ≤ 40 °C, temperature class T5 or a reduction of current to 12 A.

6 Transport, Storage and Disposal

Transport

▶ Shock-free in its original carton, do not drop, handle carefully.

Storage

▶ Store in a dry place in its original packaging.
▶ Storage temperature range: - 55 °C ... + 80 °C

Disposal

▶ Ensure environmentally friendly disposal of all components according to legal regulations.

7 Assembly

7.1 Assembly, wall-mounted socket, type 8570/11-...

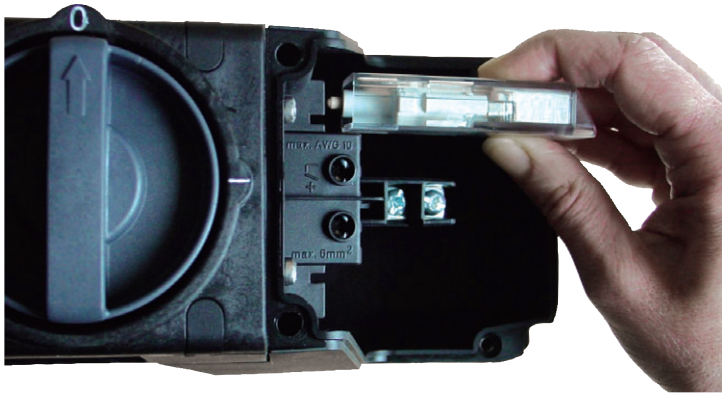
☞	If exposed to the elements, the casing must be provided with a protective canopy or wall.

Position for use: Hinged cover down, connection chamber up

▶ Fasten the wall-mounted socket, in a vertical position, to a flat wall, using four screws.

☞	The securing holes are elongated. This allows the casing to be adjusted both vertically and horizontally.

Assembling the auxiliary contacts



11203E00

▶ Open enclosure.
▶ Insert the auxiliary contacts into the left or right receptacle (until they engage). Both can be fitted if necessary.
▶ Close the casing.

7.2 Assembly, plug type 8570/12-...

☞	To prevent dirt from contaminating the contacts, a compatible sealing cap can be used (see Chapter 12, “Accessories and Spare Parts“).

Position for use: When the plug is disconnected, it must be hung with the pins pointing downwards.

8 Installation

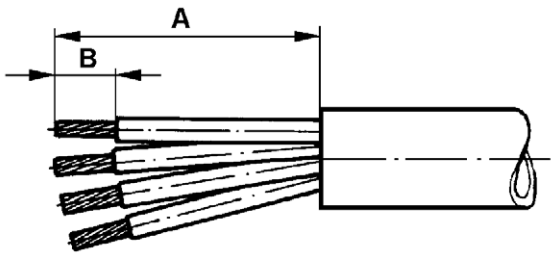
⚠WARNING
Danger from live parts! ▷ Risk serious injury. ▶ All connections and wiring must be disconnected from the power supply. ▶ Secure the connections against unauthorised re-connection.

⚠WARNING
Danger of explosion! ▷ There is a risk of injury to persons and material damage. ▶ Choose a suitable conductor, so that the maximum permissible conductor temperature is not exceeded. ▶ If using wire end ferrules, fit these in a gastight manner using the appropriate tool. ▶ Only use 2-core cables, without screen braiding in intrinsically safe circuits. Observe the insulating capacity and spacing between intrinsically safe and non-intrinsically safe circuits, in accordance with IEC/EN 60079-11 and IEC/EN 60079-14, section 12. ▶ Only use separately tested cable entry glands and sealing plugs, which have an EC-Type examination certificate. ▶ Conductor insulation must reach right to the terminal. ▶ The conductor must not be damaged (e.g. notched) when stripping the insulation. ▶ Always connect the protective earth conductor.

8.1 Installation wall-mounted socket, type 8570/11

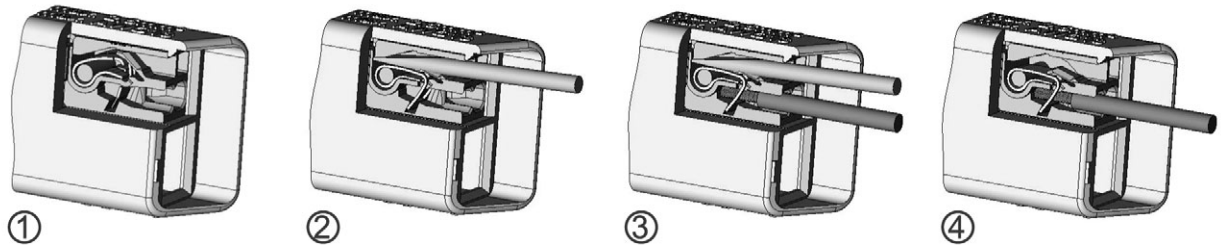
☞	Two conductors can be clamped under a single terminal. Conductor material and cross sectional area must be identical.The conductors can be connected, without special preparatory measures.

	Dimensions [mm]	
	A	B
Main contacts	180	10
Auxiliary contacts	180	6
Auxiliary contacts Ex i	20	6



- ▶ Open enclosure.
- ▶ Pass the cable through the cable entry into the connection chamber.
- ▶ Insert the conductors into the corresponding terminals and clamp them (tightening torque: see Chapter 5, “Technical Data“). The stripped ends of the wire must be fully beneath the terminal clamping plate.
- ▶ Align the wires (clamped ends must be relieved of strain).
- ▶ Tighten the cable gland(s).
- ▶ Close enclosures. Tightening torque see Chapter 5 Technical Data.

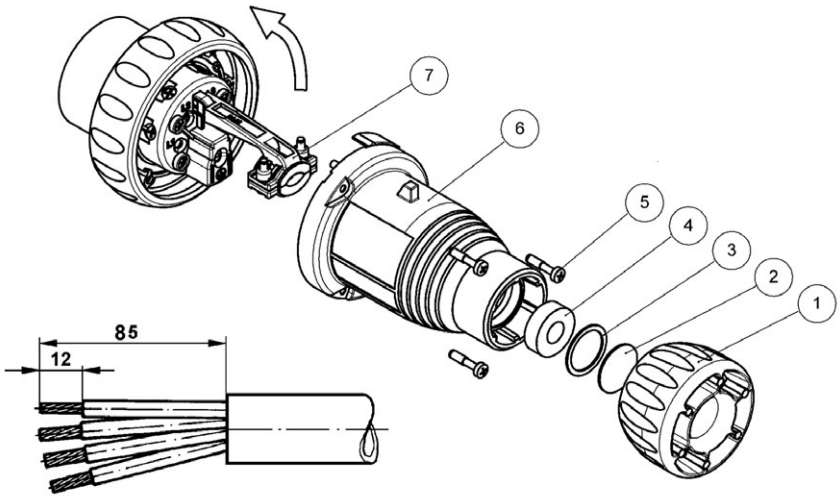
Installing auxiliary contacts



11202E00

- Open enclosures.
- Pass the cable through the cable entry into the connection chamber.
- Unlock screwless terminals with a slotted screwdriver 0.6x3.5 mm - ISO 2380 (2) and secure stripped wire ends. The stripped wire ends must be entirely placed under the clamp plate.
- Align the wires (clamped ends must be relieved of strain).
- Tighten the cable entry gland(s).
- Close enclosures. Tightening torque see Chapter 5 Technical Data.

8.2 Installation, plug, type 8570/12-...



11222E00

- Screw the cable gland (1) off and remove the dust exclusion plate (2).
- Remove the pressure ring (3) and seal (4).
- Remove the shell securing screws (5) and remove the plug shell (6).
- Insert the cable (max. 4 mm^2) through the cable gland (1), pressure ring (3) and seal (4). If necessary, cut the seal out to match the cable diameter.
- Open the strain relief (7) and swivel it by 90°.
- Insert stripped cable ends in corresponding terminal and clamp (1.2 Nm). The stripped wire ends must be entirely placed under the clamp plate.
- The stripped ends of the wire must be fully within the terminal clamp.
- Swivel the strain relief back into position and fit it to the cable. The clamped end must be relieved of strain.
- Fit the plug shell, insert and tighten screws (tightening torque: see Chapter 5, "Technical Data").
- Press the seal into the plug shell, apply the pressure ring and screw the cable gland tight.

9 Commissioning

Before commissioning

- ▶ Check for correct assembly and installation.
- ▶ Inspect the casing for damage.
- ▶ Remove foreign objects if necessary.
- ▶ Clean the connection chamber if necessary.
- ▶ Check that the cables enter the casing correctly.
- ▶ Check-tighten all screws, bolts and nuts.
- ▶ Check-tighten all cable entry glands and sealing plugs.
- ▶ Observe the mains voltage.
- ▶ Seal all cable entries, which are not used, with plugs certified in accordance with directive 94/9/EC and seal all holes, which are not used, with sealing plugs certified in accordance with directive 94/9/EC.
- ▶ Only operate if fully assembled.

10 Operation

☞	The wall-mounted socket and plug must only be operated if fully assembled.

10.1 Operation, wall-mounted socket, type 8570/11-...

☞	✗ The wall-mounted socket switch can only be operated if a plug is inserted. ✗ When the plug is disconnected, lock the hinged cover with the bayonet ring.

Only type 8570/12 and 8575/12 plugs, manufactured by R. STAHL, must be used.

10.2 Operation, plug, type 8570/12-...

If a short circuit occurs in the circuit, to which the plug is connected, check the function of the plug.

The plug can be operated together with the following products manufactured by R. STAHL.

- ✗ Wall-mounted sockets 8570/11, 8575/11, 8575/13, 7570/11 and 7575/11
- ✗ Flange sockets 8570/15 and 8575/15
- ✗ Coupling sockets 8575/14 and 8575/16

The plug fits industrial sockets (compliant with CEE standard).

11 Maintenance

⚠WARNING
Danger from live parts! ▷ Risk serious injury. ▶ All connections and wiring must be disconnected from the power supply. ▶ Secure the connections against unauthorised re-connection.

⚠WARNING
Danger through defective switch contacts! ▷ There is a risk of injury to persons and material damage. ▶ The complete flange socket must always be replaced, if a short circuit occurs in the switch's main circuit, as the state of the switch contacts of hermetically sealed devices can not be determined.

11.1 Regular Maintenance Work

- ▶ Refer to the corresponding national regulations (e.g. IEC/EN 60079-17) for the type and scope of tests.
- ▶ The maintenance intervals must be chosen, such that the occurrence of deficiencies, anticipated in the system, can be avoided.
- ▶ The plug must be disconnected at regular intervals, to prevent contact corrosion.

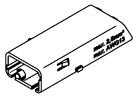
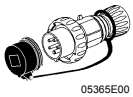
The following items must be checked as part of the maintenance schedule:

- ✗ Check that no cable connections are loose.
- ✗ Inspect the casing for visible signs of damage.
- ✗ Check that the permitted temperatures, in accordance with IEC/EN 60079-0, are adhered to.
- ✗ Check that female contacts are clean.
- ✗ Inspect seals for damage.
- ✗ Check that the device functions correctly.
- ✗ Check that surfaces of the plug pins are not damaged.

11.2 Cleaning

- ✗ Clean with a cloth, brush, vacuum cleaner or similar items.
- ✗ When cleaning with a damp cloth use water or mild, non-abrasive, non-scratching cleaning agents.
- ✗ Never use aggressive cleaning agents or solvents.
- ✗ Avoid the ingress of water or cleaning agents into the female contacts.

12 Accessories and Spare Parts

Designation	Illustration	Description		Order number
Sealing plugs	04840E00	8290/3-M 25 x 1.5	1 piece	143524
Auxiliary contacts	 10341E00	1 NO		150682
		1 NC		150680
		1 NO, gold contact		150686
		1 NC, gold contact		150684
Protection caps	 05365E00	for plug 16 A	3-pole not for extra-low voltage version	150496
		for plug 16 A	4-pole	150510
		for plug 16 A	5-pole	150520

13 EC Type Examination Certificate

13.1 EC Type Examination Certificate (Page 1)

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) **EC-TYPE-EXAMINATION CERTIFICATE**

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 03 ATEX 1227

(4) Equipment: Plug-and-socket device, type 8570/..-...

(5) Manufacturer: R. STAHL Schaltgeräte GmbH

(6) Address: 74638 Waldenburg (Württ.), Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 04-13432.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + A1 + A2 **EN 50018: 2000** **EN 50019: 2000**
EN 50281-1-1:1998

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G/D EEx ed [ia] IIC T6 IP 66 T80 °C

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, March 24, 2004

Dr.-Ing. U. Klausmeyer
Regierungsdirektor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 30

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EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

13.2 EC Type Examination Certificate (current supplement)

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1st SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 1227

(Translation)

Equipment: Plug-and-socket device, type 8570/..-...

Marking: Ⓔx **II 2 G EEx ed [ia] IIC T6**
II 2 D IP 66 T 80°C

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: Am Bahnhof 30
74638 Waldenburg (Württ.), Germany

Description of supplements and modifications

The plug-and-socket device, type 8570/..-..., may be manufactured with the following modifications:

- The wall-mounting socket outlet, mounted in a basket guard, is designed as a portable socket outlet.
  The type name for this version is: 8570/.6-...
- The cable entries used may also be of a type permitting mobile applications as certified under a separate test certificate. The screw threads are mounted with interference fit, using a tool.
- The inner contour line of the switch element has been modified.
- Alternative materials are used for the plug-and-socket device.

Applied standards

EN 50014: 1997 + A1 + A2
EN 50020: 2002
EN 50018: 2000 + A1
EN 50281-1-1:1998
EN 50019: 2000

Test report: PTB Ex 05-15305

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. M. Thedens
Regierungsrat

Braunschweig, February 10, 2006

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EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig, Germany

14 EC Declaration of Conformity

EG-Konformitätserklärung
EC-Declaration of Conformity
Déclaration de Conformité CE

Wir *(we; nous)*

R. STAHL Schaltgeräte GmbH, Am Bahnhof 30, 74638 Waldenburg, Germany — **8570/..-...**

erklären in alleiniger Verantwortung, dass das Produkt
hereby declare in our sole responsibility, that the product
déclarons, sous notre seule responsabilité, que le produit

Steckvorrichtung
Plug and socket
Prise de courant

mit der *(under; avec)* **EG-Baumusterprüfbescheinigung:**
EC-Type Examination Certificate:
Attestation d'examen CE de type:

PTB 03 ATEX 1227

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt
which is the subject of this declaration, is in conformity with the following standards or normative documents
auquel cette déclaration se rapporte, est conforme aux normes ou aux documents normatifs suivants

Bestimmungen der Richtlinie *terms of the directive* *prescriptions de la directive*	**Nummer sowie Ausgabedatum der Norm** *Number and date of issue of the standard* *Numéro ainsi que date d'émission de la norme*
94/9/EG: ATEX-Richtlinie *94/9/EC: ATEX Directive* *94/9/CE: Directive ATEX*	EN 60079-0:2006 EN 60079-1:2007 EN 60079-7:2007 EN 61241-0:2006 EN 61241-1:2004
2004/108/EG: EMV-Richtlinie *2004/108/EC: EMC Directive* *2004/108/CE: Directive CEM*	

Qualitätssicherung Produktion:
Production Quality Assessment:
Assurance Qualité Production:
PTB 96 ATEX Q006-6

Kenn-Nr. der benannten Stelle / *Notified Body number / N° de l'organisme de certification:* 0102

Waldenburg, 08. Sept. 2009	i.V.	i.V.
Ort und Datum *Place and date* *Lieu et date*	**B. Limbacher** **Leiter Entwicklung** *Head of Development* *Directeur Développement*	**Dr. S. Jung** **Leiter Qualitätsmanagement** *Director Quality Management Dept.* *Directeur Dept. Assurance de Qualité*

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150646 / 8570601300
S-BA-8570/11/12-04-en-17/06/2009